

CW -

Exponential Growth + Decay

$$y = a \cdot b^x$$

b is to the x power

■ $0 < b < 1 \Rightarrow$ decay Ex: $y = 3\left(\frac{1}{4}\right)^x$, $y = 0.7(0.6)^x$

■ $b > 1 \Rightarrow$ growth Ex: $y = 4 \cdot 2^x$, $y = \frac{1}{3}(7)^x$

Decide if each is growth or decay.

1) $y = 5(2)^x$

2) $y = \frac{1}{3}\left(\frac{1}{5}\right)^x$

3) $y = \frac{1}{4}(5)^x$

4) $y = 10(3)^x$

5) $y = 5\left(\frac{1}{2}\right)^x$

6) $y = 1.5(0.8)^x$

7) $y = 0.8(1.9)^x$

8) $y = 7(4.6)^x$

9) $y = -8(3)^x$

10) $y = -2\left(\frac{1}{7}\right)^x$

Graphing

Make a table and a graph for the following

1) $y = 2 \cdot 3^x$

2) $y = 16\left(\frac{1}{2}\right)^x$

3) $y = 2^x$